Small Size of the Brain in Tertiary Mammals.
By Prof. O. C. Marsh.

At the last meeting of the Connecticut Academy of Arts and Sciences, June 17th, Prof. Marsh, of Yale College, made a communication on the size of the brain in Tertiary mammals. His researches on this subject have been mainly confined to the larger extinct mammals which he had obtained in the Rocky-Mountain region; and the results are of peculiar interest. The Eocene mammals all appear to have had small brains; and in some of them the brain-cavity was hardly more capacious than in the higher reptiles. The largest Eocene mammals are the Dinocerata, which were but little inferior to the elephant in bulk. In *Dinoceras*, Marsh, the type genus, the brain-cavity is not more than one eighth the average size of that in existing rhinoceroses; in the other genera of this order (*Tinoceras*, Marsh, and *Uintatherium*, Leidy) the smallness of the brain was quite as remarkable. The gigantic mammals of the American Miocene are the Brontotheridæ, which equalled the Dinocerata in size. In *Brontotherium*, Marsh, the only genus of the family in which the skull is known, the brain-cavity is very much larger than in the Eocene *Dinoceras*, being about the size of the brain in the Indian rhinoceros. In the Pliocene strata of the West a species of *Mastodon* is the largest mammal, and although but little superior in absolute size to *Brontotherium*, it had a very much larger brain, but not equal to that of existing Proboscidians. The tapiroid Ungulates of the Eocene had small brain-cavities, much smaller than their allies, the Miocene Rhinocerotidæ. The Pliocene representatives of the latter group had well-developed brains, but proportionally smaller than living species. A similar progression in brain-capacity seems to be well marked in the equine mammals, especially from the Eocene *Orohippus*, through *Miohippus* and *Anchitherium* of the Miocene, *Pliohippus* and *Hipparion* of the Pliocene, to the recent *Equus*. In other groups of mammals likewise, so far as observed, the size of the brain shows a corresponding increase in the successive subdivisions of the Tertiary. These facts have a very important bearing on the evolution of mammals, and open an interesting field for further investigation.

On Euphysetes Pottsii. By Dr. Julius Haast, F.R.S.

This small Catodont whale was stranded amongst the rocks in Governor Bay, near Ohinitahi, and was sent by Mr. T. H. Potts to the Canterbury Museum, New Zealand. It was an adult female, 7 feet 2 inches long, and very like *Euphysetes Grayi*; but that species has 7 cervical, 14 dorsal, 9 lumbar, and 21 caudal vertebræ (of which 13 have chevron bones attached), making 51 altogether. *Euphysetes Pottsii* has only 50 vertebræ; and they are differently arranged. The 7 cervical vertebræ are soldered together; there are only 12 dorsal (instead of 14), 11 lumbar (instead of 9), and 20 caudal with 8 chevron bones attached (instead of 21).

The Australian species has 14 ribs, while the New-Zealand species has only 12, of which the first one is broad and flat, and has, like the second, third, fourth, fifth, and sixth, two articulating surfaces; whilst, according to MacLeay, the Australian species has only one articulating surface on the first rib. The second rib exhibits a considerable breadth, whilst the succeeding ones become gradually narrower. The last six ribs, which assume a rounded shape, possess only one articulating surface.

Even supposing the minor difference in the form of the skull to be due to sex, the number, arrangement, and form of the vertebræ and ribs would prove the distinct specific character of the New-Zealand specimen.

The contents of the stomach consisted of a dark slimy matter, without any beaks of Cephalopods as found in *Berardius Arnuxi*.

There is only a single valve covering the blowholes, the slit being 2 inches long, of which $1\frac{1}{2}$ inch lies on the left and $\frac{1}{2}$ inch on the right side of the top of the head. The skin surrounding the valve is raised in a lunate form rather conspicuously on the left side, open posteriorly. The left side of the valve is far more developed and stronger than the right one.

The skeleton will be figured in the forthcoming volume of the 'Transactions of the New-Zealand Institute,' t. xv.

On a new Genus of Asellidæ. By Oscar Harger.

The presence of mandibular palpi has been hitherto regarded as a character of the family of *Asellidæ*, and is thus given by Dana (U. S. Exploring Expedition, Crustacea, p. 714), and by Bate and Westwood, in their late work on British Sessile-eyed Crustacea, vol. ii. p. 313. This organ is present and well developed in *Jæra copiosa*, *Asellodes alta*, and *Limnoria lignorum*, marine species of this family found on the coast of New England. It has been carefully figured by G. O. Sars (Hist. Nat. des Crustacés d'eau douce de Norvège, 1e livr. pl. viii.) for *Asellus aquaticus*, and occurs in *A. communis*, Say, as well developed as in the European species; but in *A. tenax*, Smith, from Lake Superior, it is wanting. This species seems to be in all other respects closely related to the genus *Asellus*, differing from other species of that genus by characters of specific value only. The most noticeable of these differences are the following:—the antennulæ have the third segment of the peduncle small, short, and similar to those of the flagellum; the ocelli are numerous, as in *A. communis*; the appendages of the first abdominal segment in the females are sub-quadrant-shaped, meeting each other along the median line, much as in *A. communis*, instead of subcircular and overlapping as in *A. aquaticus*. The caudal stylets resemble those of *A. aquaticus*, as do also the feet and the mouth-parts, except in the absence of the mandibular palpi; and on this character I propose for the species the new generic name of *Asellopsis*.—*Silliman's American Journal*, June 1874.